# Complete Summary

## GUIDELINE TITLE

Manual medicine guidelines for musculoskeletal injuries.

## BIBLIOGRAPHIC SOURCE(S)

Braddock E, Greenlee J, Hammer RE, Johnson SF, Martello MJ, O'Connell MR, Rinzler R, Snider M, Swanson MR, Tain L, Walsh G. Manual medicine guidelines for musculoskeletal injuries. California: Academy for Chiropractic Education; 2007 Apr 1. 33 p. [108 references]

## GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Braddock EJ, Greenlee J, Hammer RE, Johnson SF, Martello MJ, O'Connell MR, Rinzler R, Swanson MR, Tain L, Vogel JA, Walsh G. Manual medicine guidelines for musculoskeletal injuries. California: Academy for Chiropractic Education; 2004 Dec 1. 25 p.

## COMPLETE SUMMARY CONTENT



## SCOPE

### DISEASE/CONDITION(S)

- Musculoskeletal injuries
- Chronic pain syndrome

### GUIDELINE CATEGORY

Diagnosis
Evaluation

Management
Rehabilitation
Treatment

## CLINICAL SPECIALTY

Chiropractic

## INTENDED USERS

Chiropractors
Health Care Providers
Health Plans
Managed Care Organizations
Patients
Utilization Management

## GUIDELINE OBJECTIVE(S)

To provide recommendations for evaluation, diagnosis, and treatment of musculoskeletal injuries

## TARGET POPULATION

Individuals with musculoskeletal injuries

## INTERVENTIONS AND PRACTICES CONSIDERED

### Diagnosis/Evaluation

1. Medical history including mechanism of injury, symptoms, treatment to date, physical activities, past medical history, family history, and psychological factors that may delay recovery
2. Physical examination including general appearance; vital signs; regional orthopedic and neurological examination; aberrant movement patterns; examination of related body parts; postural inspection, percussion and palpation; gait analysis; and additional testing as indicated
3. Diagnostic tests including x-rays, magnetic resonance imaging (MRI), computed tomography (CT), bone scans, electrodiagnostic studies, and laboratory studies if indicated

### Treatment/Management

1. Patient education regarding recovery process, diagnosis, treatment options, self-guided care, over-the-counter medication use, need for prescription medication, and reasonable expectations
2. Manual therapy/manipulation, including use of instrumentation
3. Complementary procedures including manual or mechanical traction; neuromuscular re-education; myofascial release; trigger point therapy; muscle stretch techniques; mobilization; use of supports, braces, splints or orthotics; physical medicine modalities and procedures

4. Active care (acute, sub-acute, and chronic)
5. Referral to a specialist if indicated

### MAJOR OUTCOMES CONSIDERED

Not stated

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

MEDLINE, Cochrane, and Mantis databases were used to collect the evidence.

### NUMBER OF SOURCE DOCUMENTS

Not stated

### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

### METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

### COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

### METHOD OF GUIDELINE VALIDATION

Not stated

### DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

#### History

Take a related history from the patient. It may include but not be limited to:

#### Mechanism of Injury

- Details of the accident or the injury (i.e., specific or cumulative trauma, body parts involved initially or recruited due to altered biomechanics.)

#### Symptoms

- Current Symptoms (i.e., intensity, frequency and duration, quality of pain/altered sensation, impairment or effect on daily activities.)
- Initial and Subsequent Symptoms
    - Improving, getting worse, or staying the same
    - Relieving or aggravating activities
- Associated Symptoms (i.e., fever, changes in bowel or bladder function, numbness and tingling.)

#### Treatment to Date

- Type of treatment
- Response to treatment provided (i.e., medications, manual treatment, self-care, etc.)

#### Physical Activities

- Occupational
- Recreational
- Exercises
- Other

#### Additional Medical History

- General health (i.e., changes in appetite, weight, energy level, sleep pattern)

- Prior injuries (i.e., industrial injuries, motor vehicle accidents, fractures)
- Prior disability or impairment
- Surgeries
- Prior similar complaints
- Serious illnesses
- Current medications
- Other risk factors (e.g., weight, tobacco, alcohol, drugs, or hobbies)

**Family History**

**Psychosocial Factors That May Delay Recovery**

**Examination**

- General appearance (development, nutrition, body habitus, deformities)
- Vital signs
- Regional orthopedic and neurological examination (i.e., ranges of motion; motor, sensory, reflex testing)
- Aberrant movement patterns
- Examine related body parts (i.e., upper extremity examination with cervical spine complaints)
- Postural inspection, percussion and palpation
- Gait analysis
- Additional testing as indicated may include:
    - Girth measurements in the extremities
    - Functional muscle testing
    - Vascular testing

**Diagnostic**

Testing should be done with best clinical judgment to establish or support the diagnosis or for the necessary treatment of the patient.

X-ray or other diagnostic studies may be performed if patient fails to respond in 4 weeks or experiences a significant increase in symptoms or impairment.

Typically x-rays may be indicated within the first 30 days of injury if one of the following is present:

- Fever greater than 100 degrees that persists for longer than 48 hours
- Unrelenting night pain or pain at rest
- Aberrant pain, paresthesia, or numbness
- Motor deficit
- Progressive neurological deficit
- Significant trauma
- Suspicion of fracture
- Suspicion of progressive disease (i.e., osteopenia, osteoporosis, ankylosing spondylitis, metabolic disease, scoliosis)
- Drug or alcohol abuse
- Chronic use of steroids
- Age over 50

- History of chronic pain in the same body part
- Previous spinal surgery to same body area
- Unexplained weight loss or changes in bowel/bladder function

**Indications for Imaging, Electrodiagnostic or Laboratory Studies**

*Magnetic Resonance Imaging (MRI) Indications*

- Loss of bowel or bladder function
- Significant, persistent or progressive neurological deficit
- Suspected:
    - Myelopathy
    - Metastasis
    - Tumor
    - Osteomyelitis
    - Paraspinal abscess/fluid
    - Vascular malformation
    - Pathological fracture
    - Congenital spinal anomalies
    - Post-surgical MRI with gadolinium
    - Interarticular derangement
    - Ligament laxity
    - Spinal instability
    - Avascular necrosis
    - Muscle or tendon tear
- Failure to respond to conservative care

*Computed Tomography (CT) Indications*

- Refractory radiculopathy
- Focal motor deficit
- Fracture
- Foreign bodies
- Post-operative assessment
- Congenital/developmental fracture or abnormalities
- Where MRI contraindicated (pacemaker, implants, claustrophobia)
- Suspected spinal stenosis

*Bone Scan*

- Suspected metabolic disease

*Electrodiagnostic Studies*

- Persistent neurological symptoms necessitating differentiation of radicular vs. peripheral neuropathy
- Conditions non-responsive to conservative care requiring determination of the severity of the deficit

*Laboratory Indications*

- Persistent fever
- Multiple or migrating joint pain or swelling
- Lack of response to treatment determined to be appropriate for the diagnosis
- Suspicion of infection or family history of systemic, metabolic, rheumatoid or autoimmune conditions

**Patient Education**

Discuss the diagnosis and treatment options.

Discuss reasonable expectations for the resolution of symptoms, and return to work or other activities. Inform the patient that it is not uncommon for patients who recover from the initial episode to have another episode, but improvement is to be expected. Reassure the patient of the anticipated recovery or improvement.

Instruct the patient in appropriate self-guided care. This may include discussion of:

- Limited bed rest with gradual return to normal activities
- Activities or positions to limit or avoid
- Continuing activities within limits permitted by pain or other symptoms
- Posture and proper body mechanics
- Gentle stretching
- Ice/heat
- Instruction in exercises

Discuss patient's use of over-the-counter (OTC) medications or need for prescriptive medication.

**Treatment**

**Manual Therapy/Manipulation**

- Adjustive manipulative procedures and other manual therapies including utilization of instrumentation. The effect is to normalize joint mobility and nerve function in addition to pain reduction, with frequent compensatory changes in other areas. Secondary changes in peripheral neurological function and may include relief from somatic pain syndromes, nerve compression syndromes, functional disorders and anatomical pain syndromes.
- Primary focus is on functional abnormalities of joints, which may include fixation, hypermobility or hypomobility. Contributing factors include muscular hypertonicity or weakness, ligamentous shortening or elongation, and articular adhesions if not corrected. The mechanism for blockage of articular movement may involve mechanical joint locking, disc disorders and/or intra-articular jamming of various tissues.

**Complementary Procedures**

- Intended to normalize joint function, decrease muscle spasm, decrease pain, reduce edema or inflammation, improve muscle tone, increase joint mobility

or stability, increase soft tissue flexibility, decrease pain and maximize integrity of fibrotic repair.
- This may include but is not limited to:
    - Manual or mechanical traction
    - Neuromuscular re-education
    - Myofascial release
    - Trigger point therapy
    - Muscle stretch techniques
    - Mobilization
    - Use of supports, braces, splints or orthotics
- Physical medicine modalities and procedures may be of benefit in conjunction with manipulation.

**Active Care**

Methods of treatment requiring active involvement, participation and responsibility on the part of the patient. This may be supervised in office or instructions for self-care. Active care in each phase of treatment should begin when, in the treating physician's judgment, it is appropriate to do so. This would be based upon, among other things, the severity of the injury, the injured area, the patient's age and other limiting factors.

- Acute: Temporarily limit or avoid specific activities known to increase or aggravate mechanical stress on the injured region. In order to avoid deconditioning, low stress aerobic and flexibility exercises can be instituted as soon as tolerated.
- Sub-acute: Recommended exercise quotas that are gradually increased result in better outcomes. Endurance programs (walking/biking/swimming) can be initiated during this phase.
- Chronic: Strengthening and stabilization exercises for the injured region can commence immediately.

Gradual increase in time per session, amount, and intensity of exercises as the patient demonstrates improvement.

Reduce, modify or discontinue exercise program if peripheralization (spread of symptoms) occurs.

**Management of Chronic Conditions**

Chronic pain syndrome is defined as persistent pain which lasts more than three months and which interferes with psychological or physiological function or which requires ongoing treatment. In general, chronic pain syndrome deals with musculoskeletal conditions, pre-existing and/or progressive degenerative conditions, neurological disorders and psychological issues including drug dependence, high levels of stress and anxiety, failed back surgery syndrome and pre-existing or latent psychopathology. The condition is not expected to completely resolve but treatment can be expected to result in some functional improvement, stabilization or slowing of progressive degenerative changes. Patients with chronic pain syndromes, whose pain has become intractable in spite of initial care and secondary treatment, may benefit from evaluation and treatment including spinal manipulative techniques, physical medicine, pain

management and physical conditioning such as therapeutic and rehabilitative exercise to help promote functional recovery. Frequently, chronic pain syndrome patients require supportive care to maintain their therapeutic gains or clinical status.

For information on Contraindication or Modifications of Spinal Manipulation refer to the "Contraindications" field in this summary.

Refer to the original guideline document for information about definitions and principles of care, criteria for referral, temporary disability, and complicating factors.

### CLINICAL ALGORITHM(S)

None provided

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Appropriate evaluation, diagnosis, and treatment of musculoskeletal injuries

### POTENTIAL HARMS

Not stated

## CONTRAINDICATIONS

### CONTRAINDICATIONS

#### Contraindications or Modifications of Spinal Manipulations

Prior to manipulative techniques, the patient needs to be evaluated by a doctor trained and licensed to perform manipulative therapeutics, for any underlying conditions that, based on the doctor's experience and expertise, would modify or contradict the procedure.

- *Severe sprain/strains*: Due to increased instability, refer for surgery if necessary and manipulate areas of fixation contributing to the instability.
- *Rheumatoid or Psoriatic Arthritis*: Due to potential ligament rupture or instability (i.e., transverse ligament instability), forceful manipulation is

contraindicated. Use soft tissue and mobilization techniques with light manipulation may be appropriate.

- *Serious Vascular Disease*: History or evaluation of serious vascular disease, including, but not limited to, vertebral artery dissection, vertebral basilar insufficiency, aneurysm, stroke, use of blood thinning medications or clotting disorders.
- *Musculoskeletal Disorders*: History or evaluation of some serious musculoskeletal conditions may require modification or contraindicate some manipulative techniques. These may include, but are not limited to, fracture of the involved area, severe arthritic disease or metabolic disease.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better
Living with Illness

### IOM DOMAIN

Effectiveness
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Braddock E, Greenlee J, Hammer RE, Johnson SF, Martello MJ, O'Connell MR, Rinzler R, Snider M, Swanson MR, Tain L, Walsh G. Manual medicine guidelines for musculoskeletal injuries. California: Academy for Chiropractic Education; 2007 Apr 1. 33 p. [108 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2004 Dec 1 (revised 2007 Apr 1)

### GUIDELINE DEVELOPER(S)

Academy for Chiropractic Education - Medical Specialty Society

## SOURCE(S) OF FUNDING

Academy for Chiropractic Education

## GUIDELINE COMMITTEE

Not stated

## COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

*Authors*: Eddie J. Braddock, DC, DABCO, FICC; James Greenlee, DC, DABCO; Ronald E. Hammer, DC, DABCO; Steven F. Johnson, DC, DABCO, FICC; Michael J. Martello, DC, DABCO, FICC; Michael R. O'Connell, DC, FICC; Richard Rinzler, DC, DACBSP, FICC; Mat Snider, DC, FICC; Mitchell R. Swanson, DC, FICC; Lawrence Tain, DC, FICC; Gayle Walsh, DC, FICC

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

## GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Braddock EJ, Greenlee J, Hammer RE, Johnson SF, Martello MJ, O'Connell MR, Rinzler R, Swanson MR, Tain L, Vogel JA, Walsh G. Manual medicine guidelines for musculoskeletal injuries. California: Academy for Chiropractic Education; 2004 Dec 1. 25 p.

## GUIDELINE AVAILABILITY

Electronic copies: Available from droconnell@hotmail.com

Print copies: Available from Dr. Michael R. O'Connell, D.C., F.I.C.C., Academy for Chiropractic Education, 525 South Fairmont Avenue, Suite D, Lodi, CA 95240

## AVAILABILITY OF COMPANION DOCUMENTS

None available

## PATIENT RESOURCES

None available

## NGC STATUS

This NGC summary was completed by ECRI on July 19, 2005. The information was verified by the guideline developer on October 21, 2005. This NGC summary was

updated by ECRI Institute on August 1, 2007. The updated information was verified by the guideline developer on September 4, 2007.

### COPYRIGHT STATEMENT



## DISCLAIMER

### NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx .

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.



Date Modified: 9/15/2008


DEPARTMENT OF HEALTH & HUMAN SERVICES • USA